Sprague Creek Culvert
Spanning Sprague Creek, on Going-to-the-Sun Road
Clacier National Park
Flathead County
Montana

HAER No. MT-70

WEST GLACIER

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PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

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HISTORIC AMERICAN ENGINEERING RECORD

SPRAGUE CREEK CULVERT
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Location: Spanning Sprague Creek, on Going-to-the-Sun Road, approximately ten miles northeast of the park entrance at West Glacier, Glacier National Park, Flathead County, Montana
UTM: Lake McDonald West Quad. 12/287430/5387500

Date of Construction: 1930-1931

Structural Type: Reinforced concrete slab culvert with stone masonry guardrails and wingwalls

Contractor: Glacier National Park

Engineer: National Park Service Engineering Division

Owner: Glacier National Park

Use: Vehicular bridge

Significance: The Sprague Creek Culvert is one of approximately seventeen prominent masonry and concrete structures on Going-to-the-Sun Road in Glacier National Park. The 51-mile stretch of scenic road is a unique engineering accomplishment of the early twentieth century, and the first product of a 1925 cooperative agreement between the National Park Service and the Bureau of Public Roads. The Sprague Creek Culvert is a unique structure on the road, in that it was built by day labor forces under park supervision, rather than by contract under the Bureau of Public Roads' engineers.

Project Information: Documentation of the Sprague Creek Culvert is part of the Going-to-the-Sun Road Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and Glacier National Park. Researched and written by Kathryn Steen, HAER Historian, 1990. Edited and transmitted by Lola Bennett, HAER Historian, 1992.

For measured drawing, see HAER MT-67B, sheet 2.

Going-to-the-Sun Road

The Sprague Greek Gulvert is a reinforced concrete slab culvert that carries Going-to-the-Sun Road over the Sprague Greek in Glacier National Park. Sprague Creek flows into Lake McDonald on the western side of the park. Going-to-the-Sun Road is a scenlc park road that winds through the spectacular mountains and valleys in the middle of Glacier National Park. The 51-mile road, bullt in sections between 1911 and 1933, and rebuilt during the next two decades, runs across the central portion of the park from east to west. Starting in the west, the road runs from West Glacler, along the 10-mile eastern shore of Lake McDonald and then up McDonald Greek for an additional ten miles. About one mile beyond the junction with Logan Greek, the road begins its ascent to Logan Pass. The road climbs at a 6-percent grade, passes through a tunnel, and turns at a major switchback called "The Loop." Following the contours of the sides of Haystack Butte and Pollock Mountain, the road passes over several bridges, culverts, and retaining walls, before reaching Logan Pass. Beyond the Pass, the road descends to the east along the slides of Plegan Mountain and Going-to-the-Sun Mountain before running along the north shore of St. Mary Lake. The road exits the park as lt crosses Divide Greek near St. Mary, Montana.[1]

Significance of the Road

Going-to-the-Sun Road is significant as an outstanding engineering feat of the early twentieth century. In addition, the road was the first product of the interagency cooperative agreement between the National Park Service and the Bureau of Public Roads. The agreement, signed in 1925, allowed the National Park Service to utilize the roadbullding expertise of the Bureau of Public Roads while still retaining control to protect the landscape.[2]

Sprague Greek Culvert

The section of Going-to-the-Sun Road on the eastern shore of Lake McDonald is located at the bottom of a ridge of mountains. Particularly during sprlng run-off, the water flowing down the mountainsldes can create havoc on the road. During the 1920s, the park was repeatedly cleaning up sllides that washed down the hill to the road. In 1929, there was an exceptionally large slide near Sprague Greek that convinced Glacier Park officials to realign 400 feet of the road. The realignment required a new culvert over the creek.[3]

Gonstructlon of Going-to-the-Sun Road was in a lull in 1929 and 1930, but during the four previous years, a major contract completed the western side of the road up to Logan Pass. This was the first section of the road built wlth specifications drawn up between the Bureau of Public Roads and the Landscape Architecture Division of the National Park Service. In the specifications, the landscape architects required the structures on the road to blend into the natural environment. The Sprague Greek Culvert, llke all structures bullt after the interagency agreement of 1925, needed to conform to this requirement.[4]

Because the Bureau of Public Roads had no contract for that section of the road, and because of the urgent nature of the culvert's construction, the National Park Service designed and constructed the Sprague Creek Culvert using in-house labor. At first, the National Park Service Chief Engineer's office submitted plans for a bridge 20' wide, but Glacier Park's resident engineer, Charles E. Randels, was convinced a small 3'x6' culvert would be sufficient to handle the flow of Sprague Creek. Stephen Mather, the Director of the National Park Service, visited the park in September 1930 and agreed with Randels that a full-size bridge was unnecessary. Glacier Superintendent J.R. Eakin concurred, but insisted the culvert be made slightly larger--4'x8'.[5]

The park attempted to complete the culvert's construction in the fall of 1930. First came the 3' concrete footings and, in late October, the park laborers poured the concrete for the rest of the culvert in one 14-hour stretch. The culvert was reinforced with 1"-square heavy steel bars. The steel was stronger than necessary, but the park had it on-hand and they preferred using the heavy steel to expending funds for another size.[6]

Winter closed down operations before the bridge builders could pour the concrete for the wing walls, but they completed the culvert early in the spring of 1931 at a total cost of $1786.53.

Description

The Sprague Creek Culvert is a reinforced concrete slab culvert with stone masonry guardrails and wing walls. The culvert, which is skewed in relation to the road above it, spans 14'-8", and has an overall length of 18'-4". The vertical walls of the culvert are nearly 2' thick, while the horizontal concrete slab spanning the distance between them is 1' thick, and 4'-7" above the ground. The concrete culvert is surrounded at both ends with stone masonry wing walls, which extend upward, above the level of the horizontal concrete slab, to form masonry guardrails.

ENDNOTES

1. See the Historic American Engineering Record report HAER MT-67 on the Going-to-the-Sun Road.

2. C.H. Purcell, F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel, Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks, April 22, 1925 (Record Group 79, National Archives, Washington, D.C.).

3. Office of the Superintendent, Glacier National Park, "Final Construction Reports, Appropriation 4 x 436.13 Roads and Trails, National Parks," no date; "Annual Report of the Superintendent of Glacier National Park, 1930"; Glacier Park Superintendent J.R. Eakin to Thomas Vint, May 6, 1929 (GNPLHF).

4. "Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks," April 22, 1925 (National Archives).

5. "Final Construction Report."

6. "Final Construction Report."

BIBLIOCRAPHY

"Annual Report of the Superintendent of Clacier National Park, 1930." (Glacier National Park Library Historical File).

Eakin, J.R., Glacier National Park Superintendent. Letter to Thomas Vint, NPS Landscape Architect, May 6, 1929. (Clacier National Park Library Historical Files).

Historic American Engineering Record. "HAER MT-67: Going-to-the-Sun Road." (Library of Congress, Washington, D.C.)

Office of the Superintendent, Glacier National Park. "Final Construction Reports, Appropriation 4 x 436.13 Roads and Trails, National Parks," no date. (Clacier National Park Library Historical Files).

Purcell, C.H., F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel. Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks, April 22, 1925. (Record Croup 79, National Archives, Washington, D.C.)